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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,644	09/19/2000	Gert Umbach	7196-000017	4949
7590	03/18/2004		EXAMINER	
Harness Dickey & Pierce P L C P O Box 828 Bloomfield Hills, MN 48303			PORTKA, GARY J	
			ART UNIT	PAPER NUMBER
			2188	8
DATE MAILED: 03/18/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/664,644	UMBACH, GERT	
	Examiner Gary J Portka	Art Unit 2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 19 September 2000.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-19 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 19 September 2000 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>4,6,7</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

1. Claims 1-19 are presented for examination.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on September 19, 2000, August 6, 2001, and March 22, 2002 (paper nos. 4, 6, and 7 respectively) were considered by the examiner.

Claim Objections

3. Claim 1 is objected to because of the following informalities: At lines 8 and 9 "the current control/switch command" both lack proper antecedent basis, it is suggested to change "the" to "a" in both cases. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, in view of Farrer et al., U.S. Patent 5,307,320.

6. As to claim 1, the admitted prior art at pages 1-3 and in Fig. 1 substantially discloses the recited storage control for implementing switch commands as recited, including at least one storage type command set with command sequences of switch commands, activating one after another of the switch commands of a sequence corresponding to a control command, activating a current switch command at a

predetermined time later than the preceding switch command, and also that the current switch command is dependent upon the previous switch command and the control command. The admitted prior art does not disclose information items allocated to the storage cells and supplied to the storage control that indicate the predetermined time between switch commands. However, it was known that changing the timing of such switch commands allows a control to support different device types (see Farrer, col. 2 lines 1-38). As shown in Farrer Fig. 4, the input from the host at the left is analogous to the recited control commands, and the output to memory at the right is analogous to the recited switch commands. The timing of these switch commands depends upon information stored in registers (see col. 5 line 67 to col. 6 line 12) that is used for adjusting the timing of those commands, in particular a predetermined time between switch commands, as an example a RAS-to-CAS access time (see col. 6 line 35 to col. 7 line 17). This capability allows for the use of a variety of memory types and configurations while reducing external logic required (see col. 2 lines 1-6, and col. 11 lines 46-63). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to supply and use information items indicating a predetermined time between switch commands in the admitted prior art, because this was a known implementation for allowing the use of a variety of memory types and configurations.

7. As to claims 2-19, the above prior art combination teaches all limitations partly as indigenous to the elements and operations cited hereinabove, and further explained as follows: Farrer shows a plurality of registers which are for each of the switch commands. A clock counts impulses, and times are inherently compared in order to time signals as

desired. A buffer or any memory for that matter, and whether shown in the memory controller, or as a part of for example the processor which sends commands, may be considered the recited registers for the commands. The concluded time is given since the registers give the time required to remain active for some signals.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent No:

6,553,472 B2 Parameters for delaying memory commands.

6,230,245 B1 Variable memory command sequence timing.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary J Portka whose telephone number is (703) 305-4033. The examiner can normally be reached on M-F 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703) 306-2903. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary J Portka
Primary Examiner
Art Unit 2188

March 16, 2004

